

**NOTES ON AND DESCRIPTIONS OF NEW PAMPHANTINAE,
INCLUDING FOUR NEW SPECIES OF *CATTARUS* AND A
REMARKABLE NEW MYRMECOMORPHIC GENUS AND
SPECIES (HETEROPTERA: LYGAEOIDEA: GEOCORIDAE)**

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Abstract.—Four new species of the cattarine genus *Cattarus* Stål are described (*C. erwini* from Peru, and *C. nigritus*, *C. pseudoculatus*, and *C. pallidus* from Ecuador); *Phaeax balteatus* Distant and *P. formicarius* (Distant) are redescribed and formally transferred to *Cattarus*; *C. stysi* Slater is redescribed; the new myrmecomorphic cattarine genus *Cephalocattarus* and new species *waorani* are described from Ecuador; and new distribution records are given for the pamphantines *Parapamphantus erikae* Brailovsky from Ecuador and Venezuela, and *Tropicopamphantus amazonicus* Brailovsky from Ecuador and Peru. Dorsal photographs of all species (except *Cattarus insignis* Stål) and dorsal illustrations of the adults of *Cattarus formicarius*, *Cattarus stysi*, and *Cephalocattarus waorani* and its model ant species (*Cephalotes pavonii*), and a key to the eight species of *Cattarus* are given to facilitate identification.

Key words: Heteroptera, Lygaeoidea, Geocoridae, Pamphantinae, Cattarini, *Cattarus*, *Cephalocattarus*, new genus, new species, distributions.

The Pamphantinae are a peculiar New World group of ant-mimetic bugs. Until recently, they have been placed either as a subfamily of the Lygaeidae, *sensu lato* (Barber and Bruner, 1933) or as a tribe of the Bledionotinae (Scudder, 1963). Henry (1997) agreed with Scudder's (1963) interpretation that Pamphantini belonged as a tribe of Bledionotinae, which he transferred to the newly resurrected family Geocoridae, also containing Henestarinae and the nominate Geocorinae. Slater (1999), however, reviewed this classification and provided new character information supporting the recognition of Pamphantinae as a subfamily separate from Bledionotinae but still within the Geocoridae. He also expanded the tribal classification to include, in addition to the nominate Pamphantini, Cattarini, containing the genus *Cattarus*, and Epipolopini, containing the genus *Epipolops* (Slater, 1999).

In this paper, we describe four new species of *Cattarus* Stål; formally transfer to *Cattarus* and redescribe *Phaeax balteatus* Distant and *P. formicarius* Distant; redescribe *C. stysi* Slater; provide a key to the eight species of *Cattarus*; describe the new cattarine genus *Cephalocattarus* and new species *waorani* from Ecuador; and give new distribution records for the pamphantines *Parapamphantus erikae* Brailovsky and *Tropicopamphantus amazonicus* Brailovsky. Dorsal photographs of all species, except *Cattarus insignis* Stål, and dorsal habitus illustrations of *Cattarus formicarius*, *Cattarus stysi*, and of *Cephalocattarus waorani* and its model ant species *Cephalotes pavonii* (Latrielle) are furnished to aid in identification.

All taxa in this paper are arranged alphabetically by genus and species. Measurements are given in mm. Acronyms for depositories of specimens are as follows: BNHM (The [British] Natural History Museum, London), JAS (J. A. Slater collection, Storrs, CT), MNRJ (Museu Nacional, Rio de Janeiro), NMNH (National Museum of Natural History, Smithsonian Institution, Washington, DC), and TAMU (Texas A & M University, College Station).

Cattarus Stål

Cattarus Stål 1860: 41; Slater 1999: 203. Type species: *Cattarus insignis* Stål. Monobasic.

Phaeax Distant 1893: 413; Hussey 1929: 26; Woodward 1962: 122; Scudder 1963: 82; Slater 1964: 1162; Slater and O'Donnell 1995: 73. Type species: *Phaeax formicarius* Distant. Designated by Hussey 1929. Synonymized by Slater 1999: 203.

Description. Head broader than long, ocelli small, widely spaced near inner margin of eyes; buccula evenly narrow, extending posteriorly to stridulitrum (stridulitrum also continuing onto anterior margin of prosternum), labium extending beyond mesocoxae to middle of mesosternum. Antenna slender, segment I shortest, barrel shaped; segments II and III terete, II longest, both weakly clavate, IV slenderly fusiform. Pronotum bilobed, rounded laterally, without spines, strongly constricted at middle; anterior lobe impunctate, broadest anteriorly, contiguous with hind margin of eyes and base of head, narrowing posteriorly; posterior lobe sparsely punctate, width across humeral angles subequal to anterior width of front lobe; scutellum nearly equilateral, deeply punctate. Hemelytra entire, strongly constricted at middle; clavus with two parallel rows of punctures, corium with one row of punctures bordering claval commissure and extending along margin of membrane; usually with a white fascia near constricture about level of apex of clavus and a narrow white band across apex of corium and base of membrane. Abdomen bulbous, strongly constricted at base; segments II and III fused, segment III with a pubescent ridge or tubercle at middle; spiracles II–IV dorsal; V–VII ventral. Fore femur incrassate with a stout subapical spine; middle and hind femora moderately swollen; tibiae slender. Body generally with scattered long, erect, simple setae, often interspersed with patches or bands of silvery sericeous setae, particularly laterally on pronotum and abdomen.

Discussion. With the description of four new species in this paper, eight species of *Cattarus* are now known (Slater, 1964, 1999).

KEY TO THE SPECIES OF *CATTARUS*

- 1 Head and pronotum yellow, usually with a large black spot at antero-lateral pronotal angles 2
- 1' Head and pronotum black or chiefly black, at most with orange stripes 3
- 2 Corium with a dark brown triangular mark laterally at level of apex of claval commissure immediately behind white quadrate macula; corium with a conspicuous black spot at apex; compound eye relatively short, interocular space at least one and three fourths length of eye *C. pseudoculatus*, n.sp.
- 2' Corium lacking a dark mark at posterior margin of white macula and without a black spot at apex of corium; eyes relatively more elongate, interocular space not or only slightly greater than one and one half times length of eye *C. pallidus*, n.sp.

- 3 Posterior pronotal lobe with a smooth impunctate area posteriorly between humeral angles *C. nigrinus*, n.sp.
- 3' Posterior pronotal lobe completely and conspicuously punctate including area across humeral angles 4
- 4 Membrane of forewing white with a large black median spot *C. insignis* Stål
- 4' Membrane of forewing black, at most with a narrow pale stripe across membrane immediately behind apex of corium, otherwise with only small white spots 5
- 5 Clavus variegated, inner half dark brown, outer half yellow; second antennal segment much longer than interocular space *C. stysi* Slater
- 5' Clavus completely dark chocolate brown to black; second antennal segment shorter than, or at most subequal to interocular space 6
- 6 Corium with a large quadrate orange macula bordered anteriorly by a dark stripe at level of apex of claval commissure; femora yellowish *C. erwini*, n.sp.
- 6' Corium dark, lacking an orange quadrate macula at level of apex of claval commissure; femora black 7
- 7 Membrane with a complete narrow white band running across entire membrane immediately behind apices of coria *C. balteatus* (Distant)
- 7' Membrane with only a small white triangular area adjacent to apex of corium and small spots between apical corial margins *C. formicarius* (Distant)

Cattarus balteatus (Distant), **new combination**

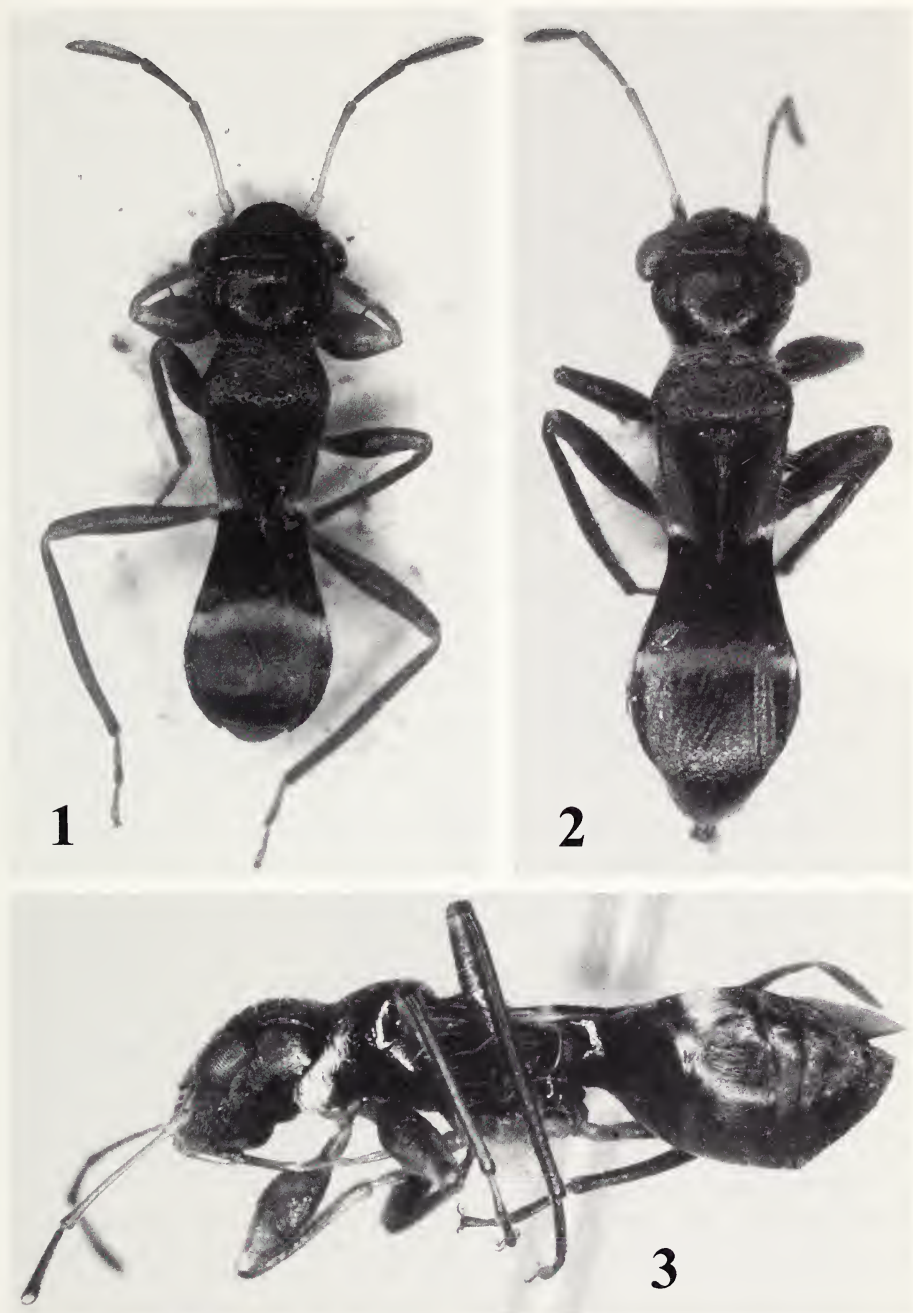
Figs. 1-3

Phaeax balteatus Distant 1893: 413; Woodward 1962: 122; Slater 1964: 1162.

Description. Relatively small, dark species, almost entirely black. A narrow, mesally tapering white triangular area on corium slightly anterior to level of end of claval commissure and a complete, straight, narrow white stripe across membrane immediately posterior to apex of corium (this extended onto adjacent area of abdominal sternum as a cluster of silvery hairs). Antenna, fore tibia, distal ends of middle and hind tibiae, tarsi and labium sordid brown, fourth antennal segment darker.

Anterior pronotal lobe very broad at anterior end, as broad as area across pronotal humeral angles. Abdomen swollen, elliptical. Posterior pronotal lobe densely punctate over entire surface. Body and legs with very long hairs. Pronotum laterally with a conspicuous fringe of silvery hairs adjacent to base of head. Head length 0.76, head width 1.22, interocular space 0.76. Anterior pronotal lobe length 0.62. Posterior pronotal lobe length 0.60, pronotal width 0.94. Scutellar length 0.36, scutellar width 0.42. Claval commissure length 0.50. Midline distance from apex of clavus to apex of corium 0.60. Midline distance from apex of corium to apex of abdomen 1.40. Antennal segment lengths I 0.20, II 0.78, III 0.48, IV 0.68. Labial segment lengths I 0.34, II 0.36, III 0.24, IV 0.42. Total body length 4.56.

Variation: Male and female paratypes in order. Head length 0.70-0.72, head width 1.20-1.24, interocular space 0.74-0.76. Anterior pronotal lobe length 0.62-0.66, posterior pronotal lobe length 0.56-0.60, pronotal width 0.94-1.20. Scutellar length 0.32-0.38, scutellar width 0.36-0.42. Claval commissure length 0.54-0.54. Midline distance from apex of clavus to apex of corium 0.62-0.68. Midline distance from apex of corium to apex of abdomen 1.20-1.31. Antennal segment lengths I 0.18-0.20, II 0.76-0.88, III 0.50-0.56, IV 0.68-0.66. Labial segment lengths I 0.32-0.40, II 0.32-0.40, III 0.28-0.32, IV 0.46-0.42.



Figs. 1-3. Photographs of *Cattarus balteatus* (Distant). 1, lectotype ♂, dorsal aspect. 2, adult ♀, dorsal aspect. 3, adult ♀, lateral aspect.

Discussion. This species was described and previously only known from Panama. Brazil is a new country record.

Material examined. BRAZIL: 1 ♂, Amazonas Hwy ZF 2, km 20.7, ca. 60 km N. Manaus, 02°30'S, 60°15'W, 16.viii.1979, Terre Firme Canopy fogging project TRS # 08, Tray 536, Adis, Erwin, Montgomery et al. collectors (NMNH); 1 ♂, 1 ♀, Amazonas, Hwy ZF 2, km 19.5, ca. 60 km N. Manaus, 02°30'S, 60°15'W, 18.viii.1979, Terre Firme Canopy fogging project TRS # 10, "Col. by hand," Adis, Erwin, Montgomery et al. collectors (JAS, NMRJ). PANAMA: Lectotype ♂, label 1 (circular, with red ring), "Type"; 2 (handwritten), "Phaeax balteatus Dist"; 3, "Bugaba, 800-1500 ft. Champion"; 4, "Sp. figured."; 5 (circular, with purple label), "Lectotype"; 6 (handwritten), "LECTOTYPE *Phaeax balteatus* Distant sel. T. E. Woodward 1961." (BNHM).

Cattarus erwini, new species

Figs. 4, 5

Description. Head, pronotum and scutellum black, except head anterior to eyes dull yellow. Clavus dark chocolate brown (almost black) with a very narrow yellow inner margin along claval commissure. Hemelytra variegated as follows: basal and distal one-third of corium black; a quadrate white macula at level of distal third of claval commissure bordered posteriorly by a narrow black fascia, posterior to which is a large quadrate orange macula. Membrane dark between coria except for a round white spot near inner anterior end of membrane. Membrane mostly black, pale laterally, with a lunate, white, transverse fascia at base. Legs and antenna sordid yellow, but antenna with distal end of segment two, proximal end of segment three, and lateral and median stripes on segment four black. Posterior half of each abdominal connexivum with a large black macula. Dorsal surface with only a few scattered setae. Transverse pronotal impression with band of decumbent, sericeous silvery setae that continues laterally and ventrally to reach forecoxae. Anterior margin of mesopleuron with a narrow conspicuous band of silvery setae.

Head length 0.76, width 1.30, interocular space 0.84. Anterior pronotal lobe length 0.80, width 1.02, posterior pronotal lobe length 0.80, width 1.02. Scutellar length 0.44, width 0.44. Claval commissure length 0.58. Midline distance from apex of clavus to apex of corium 0.76. Midline distance from apex of corium to apex of abdomen 1.60. Labial segment lengths I 0.34, II 0.34, III 0.24, IV 0.34. Antennal segment lengths I 0.18, II 0.80, III 0.42, IV 0.60. Total body length 5.22.

Etymology. This species is named after Terry L. Erwin, whose well-known canopy fogging studies in Brazil, Ecuador, Panama, and Peru have completely revised our thinking about the numbers of species on this planet, and have yielded many new and rare Heteroptera, including this new species from Peru.

Discussion. This species resembles *C. nigrinus* in many ways, but is noticeably less elongate and is more robust. It is also readily separable by the lack of a smooth area posteriorly on the posterior pronotal lobe, the much narrower silvery band of sericeous setae in the area of the transverse pronotal impression, the pale legs, and the large quadrate orange patch that completely crosses the corium. In *C. nigrinus* the middle and hind femora are black and contrast strongly with the sordid yellow fore femur. In *C. erwini* all of the legs are sordid yellow, although the middle and hind



Figs. 4–6. Photographs of *Cattarus* spp. 4, 5, *Cattarus erwini*, n. sp. 4, adult ♀, dorsal aspect. 5, adult ♀, lateral aspect. 6, *Cattarus formicarius* (Distant), lectotype ♂, dorsal aspect.

femora of the paratype female are somewhat infuscated. *Cattarus erwini* also has a more conspicuous line of punctures near the anterior margin of the pronotum.

The measurements of the female paratype are as follows: head length 0.82, head width 1.46, interocular space 0.94. Anterior pronotal lobe length 0.72, posterior pronotal lobe length 0.70, pronotal width 1.24. Scutellar length 0.42, scutellar width 0.48. Claval commissure length 0.58. Midline distance from apex of clavus to apex of corium 0.84. Midline distance from apex of corium to apex of abdomen 1.94. Antennal segment lengths I 0.22, II 0.84, III 0.46, IV 0.64. Labial segment lengths I 0.46, II 0.42, III 0.31, IV 0.42.

Types. Holotype, ♂: PERU, Madre de Dios, Rio Tambopata Res., 30 km (air) SW Pto. Maldonado, 290 m, 12°50'S, 69°17'W (Smithsonian Institution Canopy fogging Project), T. L. Erwin et al. colls., 30.iv.1984, "03/03" (held in trust at NMNH). Paratype: 1 ♀, same data as for holotype except 10.xi.1983 "03/02" (NMNH).

Additional material examined. A third specimen (a female which is very teneral) taken from this locality on 9. iii. 1984 almost certainly represents a different species. This specimen has a very coarsely punctate pronotum, black femora on all legs, red middle and hind tibiae, and dark antennae, and lacks the quadrate orange macula on the corium.

Cattarus formicarius (Distant), **new combination**

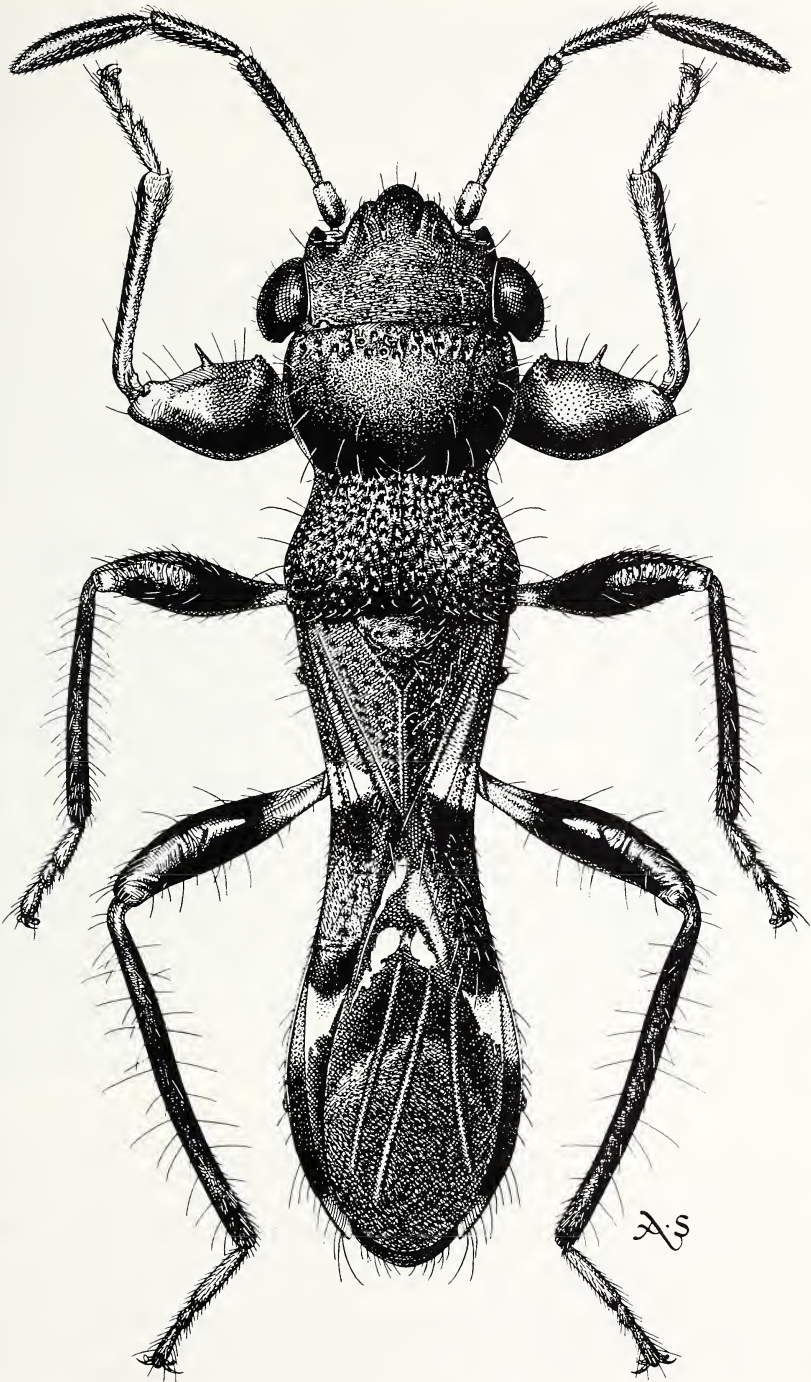
Fig. 6, 7

Phaeax formicarius Distant 1893: 413; Woodward. 1962: 122; Slater 1964: 1162.

Description. Overall coloration black, including femora, tibiae, basal half of antennal segment one, distal half of segment two and all of segments three and four. Tarsi sordid yellow. Hemelytra marked with white as follows: a transverse quadrate macula on corium at level of distal third of claval commissure extending from lateral corial margin to claval suture; three irregular spots on membrane between apical corial margins, anterior one near base of membrane and a pair at level of distal one-third of apical corial margin; a large triangular macula immediately beyond apex of corium, tapering caudo-laterad. Dorsal surface dull, finely granulose. Two rows of large coarse punctures immediately behind anterior margin of pronotum and extending onto propleuron, remainder of anterior pronotal lobe impunctate. Posterior pronotal lobe completely covered with coarse punctures. Body and appendages bearing elongate, upstanding hairs. Fore femur strongly incrassate, with a single large ventral spine and with plectron strongly produced.

Head moderately declivent, head length 0.78, width 1.31, interocular space 0.90. Anterior pronotal lobe length 0.96; posterior pronotal lobe length 0.62. Width across pronotal humeral angles 1.16. Scutellar length 0.40, width 0.44. Claval commissure length 0.60. Midline distance from apex of clavus to apex of corium 0.86. Midline distance from apex of corium to apex of abdomen 1.60. Length of antennal segments I 0.22, II 0.72, III 0.46, IV 0.70. Total body length 5.32.

Discussion. This species was described and is still only known from Panama.



Material examined. Lectotype, ♂: label 1 (circular, with purple ring), "Lectotype"; 2, "V. De Chiriqui, 25-4000 ft. Champion."; 3 (handwritten), "Phaeax formicarius Dist."; 4, "B. C. A. Hem. I Phaeax formicarius"; 5 (pale blue), "Figured A. Smith"; 6 (handwritten), "LECTOTYPE *Phaeax formicarius* Distant sel. T. E. Woodward 1961." (BNHM).

Cattarus insignis Stål

Cattarus insignis Stål 1860: 42; Scudder 1963: 88; Slater 1964: 617.

Discussion. This, the type species of *Cattarus*, has been adequately redescribed and illustrated by Scudder (1963). It is a relatively short and robust species. One of us (JAS) examined a male from "S. Paulo 7.XI.1926," which has the dorsal surface black except as follows: a strongly contrasting quadrate white macula across corium at level of distal end of claval commissure, a white oblong vitta at base of membrane followed by a pale gray area between coria, followed by a lunate white band across membrane immediately posterior to apices of coria; remainder of membrane black. Femora dark brown, paler at distal ends. Middle and hind tibiae reddish. This specimen has only the first two antennal segments, both pale yellow with the distal end of segment two infuscated. This specimen is certainly conspecific with *C. insignis*. Its measurements are as follows: Head length 0.76, head width 1.28, interocular space 0.76. Anterior pronotal lobe length 0.70, posterior pronotal lobe length 0.60, pronotal width 1.04. Scutellar length 0.36, scutellar width 0.44. Claval commissure length 0.56. Midline distance from apex of clavus to apex of corium 0.80. Midline distance from apex of corium to apex of abdomen 1.62. Antennal segment lengths I 0.20, II 0.70; III and IV absent. Labial segment lengths I 0.36, II 0.31, III 0.28, IV 0.36.

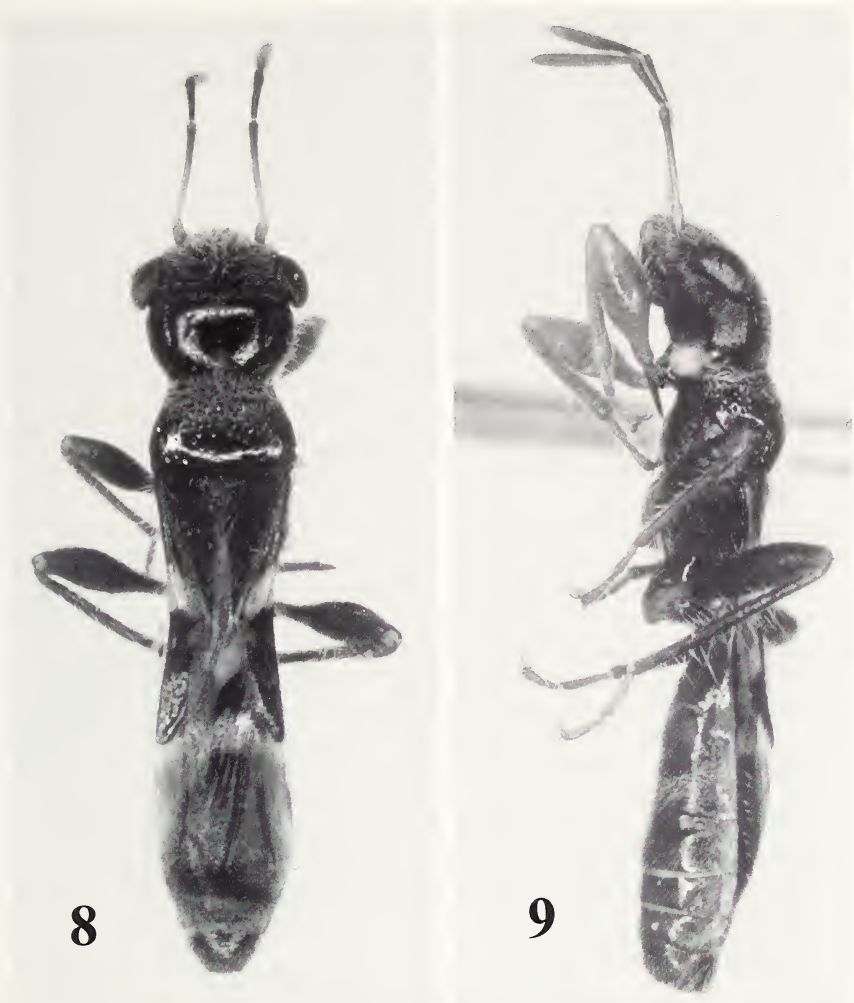
A second male from "Sao Paulo Serra de Bocaina, S. Jose Barrero, I.1969, 1650 m (M. Alvarenga)" that appears to be conspecific is quite differently colored in that the following areas are bright orange: head anterior to eyes, anterior and lateral margins of anterior pronotal lobe, greater part of posterior pronotal lobe, entire clavus, a large triangular macula on each corium posterior to distal end of claval commissure (this separated from the white corial macula only by a narrow transverse black band across corium); almost entire pleural and ventral surface of thorax orange.

Scudder's (1963) redescription of the type specimens mentions ferruginous areas anteriorly on the head and "sometimes" the anterior margin and the hind lobe of the pronotum dark brown rather than black, and a "subapical" ferruginous elongate triangular spot on the corium.

***Cattarus nigrinus*, new species**

Figs. 8, 9

Description. Head, pronotum, scutellum, and entire clavus black. Corium with a broad white transverse fascia at level of distal one-third of claval commissure. Remainder of corium black except for a small orange spot at inner angle adjacent to apex of claval commissure. Membrane narrowly dark at base, followed by a pale area and then a dark band, this followed by a lunate white band immediately caudad of corial apex, membrane entirely black posteriorly. Head anterior to base of anten-



Figs. 8, 9. Photographs of *Cattarus nigrinus*, n. sp. 8, adult ♂, dorsal aspect. 9, adult ♂, lateral aspect.

niferous tubercles, first and proximal one-third of second antennal segments, fore and middle tibiae, and all tarsi dull yellow. Fore femur pale, but somewhat infuscated with sordid brown, strongly contrasting with black middle and hind femora, and distal two-thirds and all of third and fourth antennal segments. Fore and middle acetabula laterally, and posterior lobe of metapleuron white. Dorsal surface and legs bearing numerous elongate erect hairs. Head and pronotal transverse impression clothed with numerous decumbent silvery sericeous hairs. Anterior margin of anterior pronotal lobe lacking a deep series of coarse punctures, only a few scattered punctures present, nearly impunctate. Posterior pronotal lobe and scutellum coarsely

punctate. Clavus and outer half of dark area of corium beyond transverse white fascia pruinose, contrasting with shining remainder of dorsal body surface.

Body elongate, slender. Head sloping downward to apex. Head length 0.66, width 1.32, interocular space 0.84. Swollen anterior pronotal lobe very slightly broader than width across humeral angles. Transverse impression deep. Anterior pronotal lobe length 0.68, width 1.10; posterior pronotal lobe length 0.62, width 1.08. Scutellum mesally elevated. Scutellar length 0.40, width 0.44. Claval commissure length 0.70. Corial margins moderately narrowed. Midline distance from apex of clavus to apex of corium 0.92. Midline distance from apex of corium to apex of abdomen 1.76. Metathoracic scent gland auricle straight, evaporative area large, occupying entire anterior lobe of metapleuron, similar to *C. styisi*. Fore femur incrassate with a single conspicuous ventral spine on distal half and prominent elevated spinules forming a plectron ventrally near base. Stridulitrum on head conspicuous, lunate. Labium extending onto mesosternum. Labial segment lengths I 0.32, II 0.30, III 0.30, IV 0.36. Antenna relatively slender, third segment scarcely enlarged, not conspicuously fusiform. Antennal segment lengths I 0.20, II 0.76, III 0.40, IV 0.70. Total body length 5.98.

Variation in measurements Males (N = 5; N = 4 on antennal and labial measurements), females (N = 3; means and range given first for males followed by same data for females). Head length 0.80 (0.76–0.82)–0.90 (0.82–0.94), head width 1.34 (1.32–1.40)–1.42 (1.40–1.42), interocular space 0.86 (0.84–0.92)–0.92 (0.90–0.94). Anterior pronotal lobe length 0.76 (0.72–0.80)–0.82 (0.76–0.84), posterior pronotal lobe length 0.70 (0.68–0.72)–0.72 (0.70–0.76), pronotal width 1.12 (1.04–1.18)–1.20 (1.12–1.22). Scutellar length 0.40 (0.36–0.46)–0.44, scutellar width 0.44 (0.42–0.46)–0.50 (0.46–0.56). Claval commissure length 0.64 (0.62–0.66)–0.70 (0.64–0.76). Midline distance from apex of clavus to apex of corium 0.90 (0.88–0.94)–1.00 (0.92–1.02). Midline distance from apex of corium to apex of abdomen 1.88 (1.84–1.96)–1.94 (1.84–1.96). Antennal segment lengths I 0.20 (0.18–0.22)–0.22, II 0.76 (0.70–0.80)–0.84 (0.82–0.86), III 0.36 (0.34–0.38)–0.34 (0.32–0.36), IV 0.72 (0.66–0.82)–0.70 (0.68–0.70). Labial segment lengths I 0.40 (0.38–0.42)–0.42, II 0.38 (0.36–0.40)–0.40 (0.38–0.42), III 0.30 (0.32–0.40)–0.34 (0.32–0.36), IV 0.38 (0.32–0.40)–0.42.

Etymology. This species is named for its black coloration.

Discussion. The general body form is most similar to *C. styisi*.

Types. Holotype, ♂: ECUADOR, **Napo** [Prov.], Reserve Ethnica Waorani, 1 km S. Onkone Gare camp, Trans. Ent., 12.ii.1995, 220 m, 00°39'10"S, 76°26'00"W, T. L. Erwin et al., insecticidal fogging from mostly green leaves some with covering of lichenous or bryophytic plants in terre firme forest, at Trans. 6, Sta. 4, Project MAXUS, Lot 1033 (held in trust at NMNH). Paratypes (all data same as for holotype except for date, Trans. No., and/or Lot No.): ECUADOR, **Napo**: 1 ♀, same except Lot 936; 1 ♂, same except Lot 922; 1 ♂, same except Lot 885; 1 ♂, same except Lot 929; 1 ♂, same except 12.ii.1995, at Trans. 6, Lot 1033; 1 ♀, same except Lot 1032; 1 ♀, same except "220 m, 9.x.1994, 00°39'10"S, 76°26'00"W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves some with covering of lichenous or bryophytic plants in terre firme forest at Trans. 5, Sta. 7, Project MAXUS, Lot 916 (JAS and NMNH).

Additional material examined. 3 ♂♂, 1 ♀, same data as for holotype, except



10



11

Figs. 10, 11. Photographs of *Cattarus pallidus*, n. sp. 10, adult ♀, dorsal aspect. 11, adult ♀, lateral aspect.

18.i.1994 and x-trans 1. These specimens are probably conspecific with *C. nigrinus*, but are somewhat larger, with the membrane of the front wing almost entirely black beyond the white lunate band.

***Cattarus pallidus*, new species**

Figs. 10, 11

Description. General coloration bright yellow with a large black macula present on either side of pronotum, simulating eye spots laterally on anterior half of anterior

pronotal lobe. Corium with a large white trianguloid white area at level of posterior two-thirds of claval commissure, lacking a dark marking along transverse posterior edge of white marking. Apex of corium uniformly pale yellow, without a dark apical spot. Coxae, metathoracic scent gland auricle and posterior lobe of metapleuron white. Compound eye relatively elongate. Head length 0.92, head width 1.52, interocular space 0.90. Anterior pronotal lobe length 0.80, posterior pronotal lobe length 0.70, pronotal width 1.32. Scutellar length 0.58, scutellar width 0.58. Claval commissure length 0.72. Midline distance from apex of clavus to apex of corium 1.16. Midline distance from apex of corium to apex of abdomen 2.00. Antennal segment lengths I 0.24, II 1.10, III 0.52, IV 0.74. Labial segment lengths I 0.50, II 0.48, III 0.38, IV 0.46. Total body length. 6.81.

Variation: Males (N = 3), followed by female (N = 1). Head length 0.90 (0.90–0.92)–1.08, head width 1.50 (1.48–1.52)–1.62, interocular space 0.90 (0.88–0.90)–1.00. Anterior pronotal lobe length 0.78 (0.76–0.80)–0.86, posterior pronotal lobe length 0.76 (0.70–0.80)–0.86, pronotal width 1.30 (1.28–1.31)–1.42. Scutellar length 0.56 (0.56–0.58)–0.62, scutellar width 0.56 (0.54–0.58)–0.58. Claval commissure length 0.68 (0.66–0.72)–0.84. Midline distance from apex clavus to apex corium 1.16 (1.14–1.18)–1.31. Midline distance from apex corium to apex abdomen 1.90 (1.84–2.00)–2.40. Antennal segment lengths I 0.24–0.24, II 1.08 (1.06–1.10)–1.16, III 0.50 (0.50–0.52)–0.60, IV 0.76 (0.74–0.76)–0.76. Labial segment lengths I 0.50 (0.50–0.52)–0.46, II 0.49–0.50, III 0.38 (0.38–0.40)–0.42, IV 0.46–0.50.

Discussion. We have examined a single male (NMNH) from Peru that may be conspecific, but it has a noticeable dark transverse line across the corium immediately posterior to the white marking. It is very similar in shape and general coloration to *C. pseudoculatus*.

Etymology. This species is named for its overall yellow or pallid coloration.

Types. Holotype, ♂: ECUADOR, Napo [Prov.], Res. Ethnica Waorani, 1 km S. Onkone Gare Camp, Trans. Ent, 11.ii.1995, 220 m, 00°39'10"S, 76°26'00"W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves some with covering of lichenous or bryophytic plants in terre firme forest at Trans 4, Sta 2, Project MAXUS, Lot 1021 (held in trust at NMNH). Paratypes: ECUADOR, Napo: 1 ♀, same data as for holotype except 25.i.1994, 00°38'S, 76°36'W, x-trans 5, 45 m, Lot 654; 1 ♂ same as for holotype except 9.x.1994, 00°39'S, 76°35'W at Trans. 5, Sta. 5, Lot 914; 1 ♂, same data as for holotype except 7.x.1994, at Trans 8, Sta. 3, Lot 902; 1 ♀, same as for holotype except 8.ii.1995, at Trans 10, Sta. 5, Lot 964 (JAS and NMNH).

Cattarus pseudoculatus, new species

Figs. 12, 13

Description. Color chiefly pale yellow. A large strongly contrasting black macula present in antero-lateral corners of pronotum that tapers posteriorly and curves mesally to reach middle of anterior pronotal lobe. Head, pronotum, scutellum, and clavus otherwise uniformly pale yellow. Corium with a complete transverse quadrate white fascia at level of distal third of claval commissure, bordered posteriorly along lateral half by an ovoid or triangular black macula. Apex of corium also with a conspicuous black spot. A series of black patches laterally on posterior half of abdominal con-



Figs. 12, 13. Photographs of *Cattarus pseudoculatus*, n. sp. 12, adult ♂, dorsal aspect. 13, adult ♂, lateral aspect.

nexiva 4–7. Distal end of antennal segment two slightly infuscated, proximal end of segment three with a black annulus, segment four with an elongate dark stripe on outer and inner surfaces.

Head broad, sloping downward to anterior end, tylus nearly attaining distal end of first antennal segment. Eyes large, elliptical, sessile, extending well laterad of pronotum. Head length 0.80, width 1.32, interocular space 0.88. Ocelli placed very close to compound eyes. Pronotum with transverse impression very deep. Anterior pronotal lobe swollen, as wide as posterior lobe across humeral angles, with a few scattered minute punctures. Posterior pronotal lobe sloped downward from transverse impression to scutellum and coarsely punctate. Anterior pronotal lobe length 0.72, width 1.08, posterior pronotal lobe length 0.64, width 1.10. Scutellum swollen and elevated mesally, coarsely punctate. Scutellar length 0.40, width 0.48. Hemelytra

constricted, narrowest at level of posterior end of claval commissure. Claval commissure length 0.62. Midline distance from apex of clavus to apex of corium 0.82. Midline distance from apex of corium to apex of abdomen 1.78. A broad stridulitrum occupying most of lateral surface of head. Plectron present ventrally on proximal third of fore femur, consisting of an elevated area of short tubercles. A single large ventral spine present distally on fore femur. All femora moderately incrassate, bearing a series of elongate upstanding setae. Labium short, barely attaining anterior portion of mesosternum and thus only slightly extending posteriorly beyond anterior coxae. Labial segment lengths I 0.38, II 0.36, III 0.24, IV 0.38. First three antennal segments terete, segment four fusiform. Antennal segment lengths I 0.22, II 0.78, III 0.40, IV 0.66. Total body length 6.57.

Variation: Mean and variation of males followed by same for females (Males N = 6; females N = 2). Head length 0.79 (0.76–0.84)–0.81 (0.80–0.82), head width 1.30 (1.28–1.34)–1.40, interocular space 0.81 (0.80–0.84)–0.96. Anterior pronotal lobe length 0.72 (0.64–0.76)–0.79 (0.76–0.82), posterior pronotal lobe length 0.66 (0.62–0.76)–0.71 (0.68–0.74), pronotal width 1.10 (1.08–1.14)–1.21 (1.20–1.22). Scutellar length 0.42 (0.40–0.44)–0.45 (0.44–0.46), scutellar width 0.44 (0.40–0.48)–0.49 (0.48–0.50). Claval commissure length 0.64 (0.62–0.64)–0.69 (0.68–0.70). Midline distance from apex of clavus to apex of corium 0.86 (0.80–0.90)–0.96 (0.94–0.98). Midline distance from apex of corium to apex of abdomen 1.66 (1.56–1.78)–1.75 (1.70–1.80). Antennal segment lengths I 0.21 (0.20–0.22)–0.22, II 0.78 (0.76–0.80)–0.86 (0.84–0.88), III 0.41 (0.40–0.44)–0.42 (0.40–0.44), IV 0.66 (0.64–0.68)–0.68. Labial segment lengths I 0.36 (0.36–0.38)–0.40, II 0.34 (0.34–0.36)–0.38 (0.36–0.40), III 0.28 (0.24–0.30)–0.30 (0.28–0.31), IV 0.35 (0.32–0.38)–0.39 (0.36–0.42).

Etymology. This species is named for the appearance of large eye-like spots created by the black patches on the antero-lateral pronotal angles of most of the specimens.

Types. Holotype, ♂: ECUADOR, **Napo** [Prov.], Res. Ethnica Waorani, 1 km S. Onkone Gare camp, Trans. Ent., 20.i.1994, 220 m, 00°38'S, 76°26'W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of lichens or bryophytic plants, Project MAXUS, at x-trans 7, 58 m., Lot 614 (held in trust at NMNH). Paratypes (all of the following specimens from the same locality as for holotype with exceptions of dates and transect numbers as noted): ECUADOR, **Napo**: 1 ♂ same; 1 ♀, except 15.i.1994, x-trans 6, 81 m, Lot 578; 1 ♀, same except 12.ii.1995, at Trans. 5, Sta. 5, Lot 1044; 1 ♂, same except 8.ii.1995 at Trans. 10, Sta. 3, Lot 962; 1 ♂, 00°39'10"S, 76°26'00"W, 25.vi.1994 at 5 x-trans., 70 m., Lot 736; 1 ♂, same except 21.vi.1994, at 7 x-trans, 58 m, Lot 695; 1 ♂, 12.ii.1995, at Trans 6, Sta 9, Lot 1038; 1 ♂, same except 8.ii.1995 at trans 10, Sta 8, Lot 962; 1 ♂, same except 5.x.1994, at trans 10, Sta 8, Lot 887; 1 ♂, same except 9.ii.1995 at Trans 2, Sta 9, Lot 988; 1 ♀, same except 7.x.1994, at Trans 8, Sta 2, Lot 901, Smithsonian Institution canopy fogging project, T. L. Erwin et al. (BNHM, JAS, and NMNH).

Additional material examined. ECUADOR, **Napo**: 1 ♂, 2 ♀♀, same data as for holotype, except with dates 4.x.1994 (Lot 868), 10.x.1994 (Lot 935), and 9.ii.1995 (Lot 988). These three specimens lack the characteristic black pronotal patches, but otherwise seem to be conspecific.

Cattarus stysi Slater

Figs. 14–16

Cattarus stysi Slater 1999: 204.

Redescription. Since the journal in which this species was described may not be available to many readers, we include the original description here.

“Coloration chiefly black, shading to dark brown. Head mesally, anterior pronotal lobe and scutellum black. Juga and broad lateral area of head dull yellow. A narrow yellow stripe across anterior pronotal margin. Posterior pronotal lobe mesally broadly pale yellow, lateral two-thirds fuscous. Inner half of clavus and corium caudad of apex of clavus rich red-brown, outer one-half of clavus contrastingly yellow. A broad white transverse fascia across corium at level of distal one-half of claval commissure. Corium anterior to this fascia dark brown laterally, pale yellow mesally with a line of contrastingly dark punctures adjacent to claval suture. Membrane complexly variegated as follows: extreme basal area black, becoming yellow at level of middle of apical corial margins, a broad white crescent shaped transverse band across membrane beginning laterally just caudad of apex of corium, curving anteriorly between coria mesally, area immediately caudad of white band fumose with veins dull yellow. Fore and mid acetabula laterally and posterior metapleural lobe white. Hind acetabulum yellow-brown, concolorous with trochanters and most of femora and fore and middle tibiae; hind tibiae contrastingly reddish brown for most of length, becoming pale yellow-tan on distal ends. Antennal segment one pale yellowish-brown. Abdominal venter red-brown with strongly contrasting orange-yellow connexiva on segments 5–7 and anterior one-half of connexivum 4. Body and legs clothed with numerous elongate upright hairs, also with numerous declivent silvery hairs on transverse pronotal impression, head laterally and scutellum. Head and swollen calli area of anterior pronotal lobe nearly impunctate. Pronotum with a series of deep anastomosing punctures immediately behind smooth anterior margin. Posterior pronotal lobe and scutellum conspicuously punctate. Clavus with three rows of punctures. Body surface shining, except for pruinose clavus and a broad pruinose fascia on anterior one-half of dark corial color immediately behind white transverse fascia.”

“Head sloping downward anteriorly, first antennal segment almost attaining apex of tylus. Head length 0.94, width 1.52, interocular space 0.96. Anterior pronotal lobe swollen, strongly elevated above posterior lobe with width greater than that across humeral angles. Anterior pronotal lobe length 0.90, width 1.22, posterior pronotal lobe length 0.62, width 1.10. Scutellum small, somewhat elevated mesally. Length scutellum 0.56, width 0.62. Claval commissure length 0.62. Hemelytra strongly constricted mesally, narrowest at level of distal end of claval commissure. Membrane attaining middle of abdominal tergum 7. Midline distance from apex of clavus to apex of corium 1.00. Midline distance from apex of corium to apex of abdomen 1.82. Abdomen strongly constricted basally. Middle and hind femora enlarged. Fore femora incrassate, a sharp spine present on venter at distal one-third. Plectron an elevated group of short tubercles ventrally on proximal one-third of femora. Head stridulitrum elevated. Metathoracic scent gland auricle straight, evaporative area very large occupying entire anterior lobe of metapleuron. Labium extending at least to middle of mesosternum. Labial segment lengths I 0.46, II 0.50, III 0.40, IV 0.50.

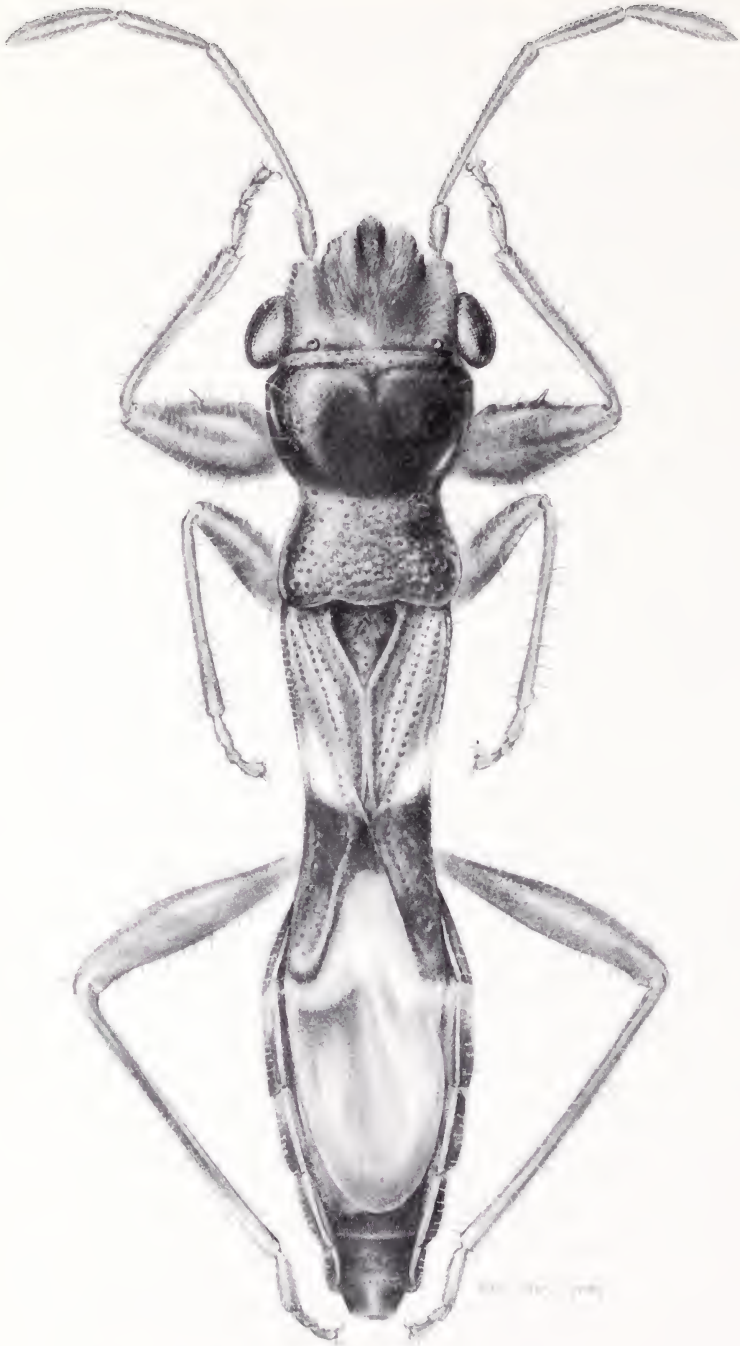


Fig. 14. Dorsal illustration of *Cattarus stysi* Slater (After Slater, 1999).



15

16

Figs. 15, 16. Photographs of *Cattarus stysi* Slater. 15, adult ♂, dorsal aspect. 16, adult ♂, lateral aspect.

Antennae stout, segments three and four fusiform. Antennal segment lengths I 0.30, II 1.16, III 0.70, IV 0.80. Total body length 6.40.”

Discussion. The description of this species was based on a male and a female from Minas Gerais, Brazil, Viçosa, Corrego de Paraiso (Mata do Prefeitura), 10.iii.1993, T. J. Henry coll. (Holotype male in MNRJ; paratype female in NMNH).

The junior author, collector of the type series, noted that the erratic behavior of the specimens in the field closely resembled that of wingless hymenopterans, not too unlike ponerine ants.

Parapamphantus erikae Brailovsky

Figs. 17, 18

Parapamphantus erikae Brailovsky 1989:197; Slater and O'Donnell 1995: 72.

Discussion. This species, previously known only from Brazil, belongs in the tribe



Figs. 17, 18. Photographs of *Parapamphantus erikae* Brailovsky. 17, adult ♀, dorsal aspect. 18, adult ♀, lateral aspect.

Pamphantini. The following specimens represent new country records for Ecuador and Venezuela.

Additional locality records. ECUADOR, **Napo:** 6 ♂♂, 10 ♀♀, Res. Ethnica Waorani, 1 km S. Onkone Gare Camp, Trans. Ent. 8, 12, and 20, i.1994–ii.1995, 220 m, 00°38'S, 76°26'W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants in terre firme forest, at 10X-trans, 42 m mark, Proj. MAXUS, Lots 572, 615, 617, 619, 745, 924, 951, 953, 909,



Figs. 19, 20. Photographs of *Tropicoparamphantus amazonicus* Brailovsky. 19, adult ♂, dorsal aspect. 20, adult ♂, lateral aspect.

979, 1005, 1043, 1047 (BNHM, JAS, NMNH). VENEZUELA, **Aragua**: 1 ♀, Rancho Grande, Henry Pittier Natl. Pk., 1100 m, 24.xii.1985, P. Kovarik, R. Jones (TAMU).

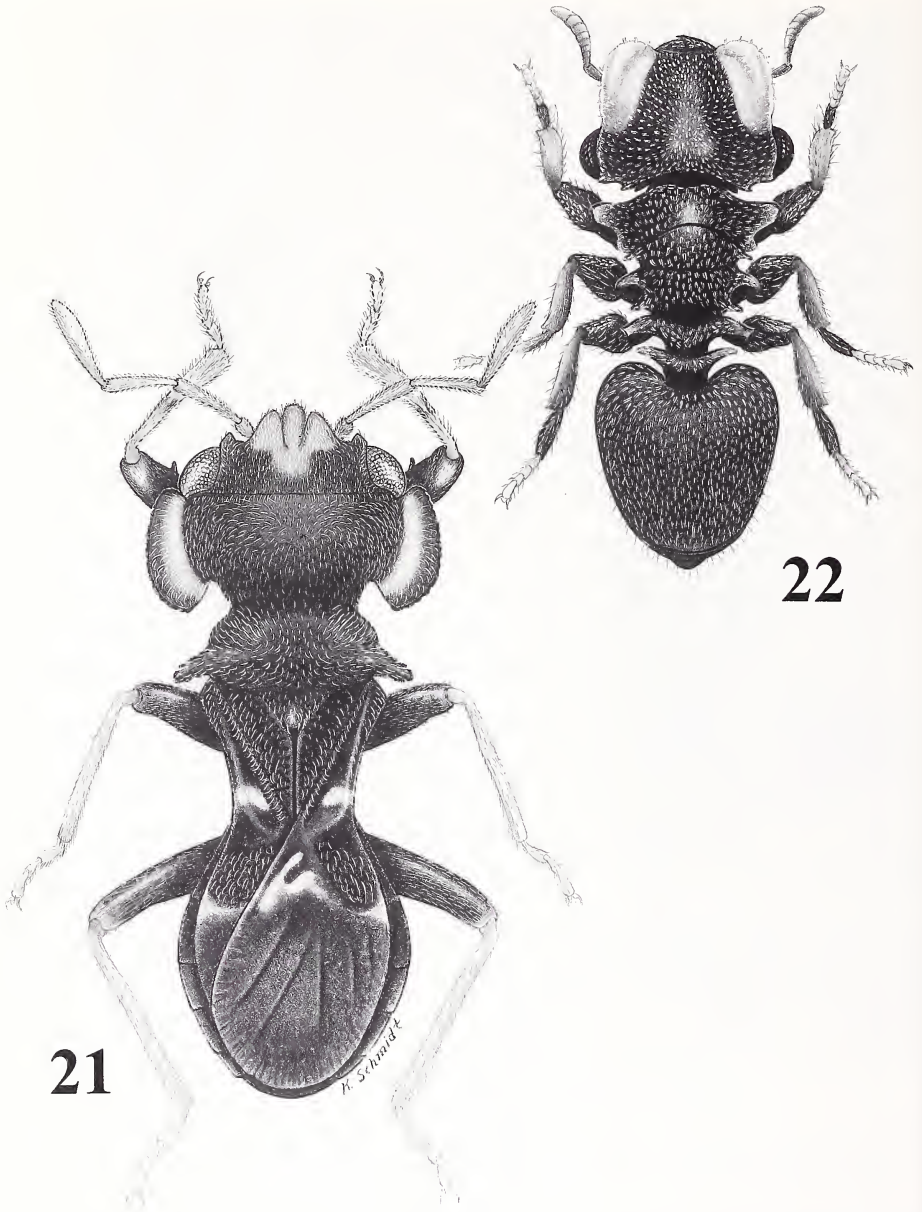
Tropicoparamphantus amazonicus Brailovsky

Figs. 19, 20

Tropicoparamphantus amazonicus Brailovsky 1989: 195; Slater and O'Donnell 1995: 73.

Discussion. This species, previously known only from Brazil, belongs in the tribe Pamphantini. The following specimens represent new country records for Ecuador and Peru.

Additional locality records. ECUADOR, **Napo**: 10 ♂♂, 12 ♀♀, 2 nymphs, Res. Ethnica Waorani, 1 km S. Onkone Gare Camp, Trans. Ent. 7, 19, 20, and 24, i.1994, 220 m, 00°38'S, 76°36'W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of bryophytic plants, Project MAXUS at x-trans



Figs. 21, 22. *Cephalocattarus waorani*, n. sp., and hypothesized ant model. 21, Dorsal illustration of *Cephalocattarus waorani*, n. sp. 22, Dorsal illustration of ant *Cephalotes pavonii* (Latreille).

7, 19 m, Lots 6, 604, 608, 612, 628, 642, 643. PERU: 3 ♀♀, Madre de Dios, Rio Tambopata Res., 30 km (air) SW Pto. Maldonado, 290 m, 12°50'S, 69°17'W, Smithsonian Institution canopy fogging project, T. L. Erwin et al. colls., 20.xi.1983 "03/02"; 2 ♀♀, same data except 10.v.1984, "04/03"; 2 ♂♂, 1 ♀, same data except 7.xi.1983, "01/02/072"; 1 ♂, 1 ♀, same data except 4.v.1984, "01/03"; 1 ♂, same data except 30.iv.1984, "03/03" (BNHM, JAS, and NMNH).

Cephalocattarus, new genus

Type species. *Cephalocattarus waorani* Slater and Henry, new species.

Diagnosis. *Cephalocattarus* is distinguished by the broad head, wing-like expansions and humeral spines on the pronotum, conical apical third of the scutellum, strongly constricted abdomen and hemelytra, distinct stridulitrum on the head and prosternum, fore femur incrassate, with a subapical spine, and a blunt tubercle on abdominal segment III of males.

Description. Myrmecomorphic (Figs. 21, 23, 24). Length 4.22 mm. Head nearly two times broader than long (68: 36); eyes reniform, posterior margins touching pronotum; ocelli small, widely placed laterally near eyes in line with outer margins of antennal bases; antenniferous tubercle prominent, tylus (or clypeus) and juga extending anteriorly to apex of antennal segment I; surface coarsely granulate, with sparse, short, sericeous setae; undersurface finely alutaceous, buccula short, rounded posteriorly, ending narrowly at base near distinctly carinate stridulatory apparatus that continues onto the prosternum. Labium four segmented (16: 15: 12: 17), extending to mesosternum just beyond procoxae. Antennal segment I shortest, barrel shaped; segment IV longest, strongly fusiform; segments II and III terete, weakly clavate distally. Pronotum highly modified, bilobed; anterior lobe broadest, deeply constricted at middle connecting to posterior lobe; lateral margins strongly explanate, forming punctate wing-like structures extending anteriorly to become contiguous with eyes; posterior lobe strongly flaring posteriorly from constricted base, each humeral angle with a stout, elongate, lateral spine; scutellum equilateral, base flattened, concealed by transverse base of pronotum, apical third conical, elevated well above level of clavus. Hemelytra weakly flared at base, then strongly narrowing to constricted middle near level of apex of clavus before flaring to cover broadly rounded abdomen; clavus with two parallel rows of deep punctures, corium with a single row of deep punctures bordering clavus and a small cluster of punctures near area of maximum constriction, remainder alutaceous, with short, sparse, sericeous setae; membrane entire with 3 to 5 indistinct veins. Ventral surface impunctate; prosternum with triangular-shaped stridulitrum that meets continuation of stridulitrum on head, extending from anterior margin to a point at proacetabulum. Metathoracic auricle straight, channel distinct, elevated above pleural surface; evaporatorium covering entire metathorax from lateral margin ventrally to carinate midline, and extending anteriorly to cover adjacent border of mesopleuron; dorsal half with deep, widely spaced punctures. Abdomen rounded, bulbous, strongly constricted at base, mostly alutaceous ventrally except for polished segments II and III; spiracles 2–4 dorsal, 5–7 ventral; segments II and III fused, segment III of male with a blunt tubercle on either side about the middle of the posterior margin; a field of fine radiating grooves anterior to tubercle suggests another stridulatory area, in addition to that on head and pros-

ternum. Middle and hind femora enlarged; fore femur incrassate, with a sharp stout ventral spine subdistally; plectron apparently represented by granulate middle $\frac{2}{3}$ of anterior surface; polished basal half of hind femur matching position of polished abdominal segments II and III suggestive of a second plectron.

Etymology. The name is formed from a combination of "Cephalo," the prefix taken from the generic name of the ant, *Cephalotes pavonii* (Latreille), which this new genus resembles because of modified head and thorax, and the generic name *Cattarus*, the type genus of the tribe Cattarini to which it belongs. The gender is masculine.

Discussion. This new genus, despite its strongly modified body structure, belongs in Cattarini and appears closely related to *Cattarus* based on the shared stridulitrum on the head and the distinct tubercle on the male abdominal segment III. Both of these genera also have abdominal spiracles II–IV dorsal and abdominal segments II and III fused and lacking any visible suture.

Cephalocattarus waorani, new species

Figs. 21, 23–25

Description. *Adult male* (Figs. 21, 23, 24): Head, pronotum, and scutellum dull black, except clypeus, juga, basal area surrounding them, and inner half of lateral pronotal wing-like structures brownish orange; eyes rich reddish brown. Labium yellowish brown. Antenna dark brown, segments II–IV more yellowish dorsally and ventrally. Hemelytra flat black, except for a small quadrate fascia at constricted area near level of apex of clavus. Membrane mostly black, narrowly white along area at base bordering apex of corium and on triangular area between coria. Femora mostly fuscous or black; fore femur brownish orange on distal $\frac{1}{4}$; middle and hind femora narrowly brownish orange distally and with a yellowish-white band at base of each; tibiae brownish red, fore femora becoming yellowish brown on anterior face; tarsi and claws yellowish brown to reddish brown. Ventral surface of thorax mostly dull black; fore and middle acetabula white; metathoracic auricle and evaporatorium black. Abdomen black; connexiva IV–VII and lateral margins of ventrites III and V–VII yellowish brown. In general sparsely pubescent, with short, sericeus, silvery setae scattered on head, pronotum, hemelytra, ventral surface of abdomen, propleuron, metathoracic evaporative surface, and underside of head.

Head length 0.70, width 1.32, interocular space 0.90. Anterior pronotal lobe length 0.60, width across wing-like expansions 1.80, posterior pronotal lobe length 0.60, width across humeral spines 1.82. Scutellar length 0.58, width 0.52, height 0.10. Claval commissure length 0.92. Midline distance from apex of clavus to apex of corium 0.64. Midline distance from apex of corium to apex of abdomen 1.20. Labial segment lengths I 0.32, II 0.28, III 0.26, IV 0.32. Antennal segment lengths I 0.16, II 0.50, III 0.40, IV 0.58. Total body length 4.22.

Figs. 23–26. *Cephalocattarus waorani*, n. sp., and hypothesized ant model. 23–25, Photographs of *Cephalocattarus waorani*, n. sp. 23, adult ♂, dorsal aspect. 24, adult ♂, lateral aspect. 25, 5th-instar nymph, dorsal aspect. 26, Photograph of ant *Cephalotes pavonii* (Latreille), dorsal aspect.



23



24



25



26

Fifth-instar nymph (Fig. 25): Head, pronotum, scutellum, and mesothoracic wing pad black. Triangular caudo-lateral angles of pronotum with a V-shaped white vitta on basal one-half. Mesothoracic wing pad with a large, broad crescent-shaped white patch extending from lateral margin to middle of wing pad at level of distal one-third of pad. Abdomen a strongly contrasting pale reddish (probably red in life) with an ovoid black sclerotized median macula extending anteriorly (only) from suture between terga 3-4; a large ovoid black macula mesally between terga 4-5 and a similar but more quadrate one with parallel sided lateral margins between terga 5-6. Both latter maculae much more strongly developed anterior to gland opening but also present posteriorly in contrast to macula between terga 3-4. Abdominal sterna 5-8 with mesal black sclerites covering entire central area of each sternite. Legs dark red brown. Antennal segments two and three bright red, dorsal surface of segment two white.

Head broad, strongly declivent with eyes sessile as in adult. Head length 0.68, width 1.30, interocular distance 0.96. Pronotum broad with flattened lateral expansions (much less well developed than in adult), with a very narrow differentiated posterior lobe laterally produced as a postero-lateral triangular tooth-like projection. Pronotal length 0.96, width 1.54, width across posterior lobe spurs 0.92. Mesothoracic wing pad extending posteriorly onto extreme anterior portion of abdominal tergum three, expanded near base laterally as a large blunt spur. Wing pad length 1.20. Abdomen broadly ovoid, sutures between terga 3-4 and 4-5 moderately curving posteriorly from lateral margins to meson; suture between terga 5-6 strongly curving posteriorly to meson. Black mesal macula of suture 3-4 apparently lacking a scent gland opening, but definite openings present between maculae on terga 4-5 and 5-6. No indication of a Y-suture between terga 3-4. Abdominal length 1.76 (approx.) width across abdomen 1.46. Antenna short and stout, fourth segment strongly fusiform. Antennal segment lengths I 0.18, II 0.40, III 0.34, IV 0.38. Labial segment lengths I 0.36, II 0.32, III 0.32 IV obscured. Total body length 5.28 (approx.).

Etymology. The specific epithet of this new species, a noun in apposition, comes from the name of the native Huaorani or Waorani [pronounced war-on-ee] people, who inhabit the region of Ecuador where the type series was collected.

Discussion. Only three specimens of this species have been discovered so far, but their remarkable resemblance to the ant *Cephalotes pavonii* (Latrielle) (Figs. 22, 26) found in the same canopy-fogging samples of *Ocotea* leaves little doubt that this is the model after which this bug is patterned. The broadly explanate pronotal margins, humeral spines, and constricted hemelytra, along with the black overall coloration accented with brownish-orange on the head, pronotum, and legs, give this catterine an appearance remarkably similar to *Cephalotes pavonii*. Hespdenheide (1986) indicated that at least 13 Central American species of *Cephalotes* Latreille (as *Zacryptocerus* Wheeler) also appear to be models for Batesian mimicry for no less than 40 arthropods. According to Creighton (1950), ants of this genus are arboreal or, at least, prefer to nest in twig cavities. Some members of this group are capable of flattening their bodies against a substrate, making them extremely difficult to pick up. This is unlike most arboreal ants that rely on agility to escape danger. Hespdenheide (1986) noted that the primary defense of many of these ants appears to be chemical and workers picked up in the field typically give off a strong odor.

The heads of major workers in some species are strongly modified into saucer-like structures that may be used to block nest entrances (Adrade and Urbani, 1999). Kempf (1951) and Adrade and Urbani (1999) redescribed and reported *Cephalotes pavonii* from Brazil, French Guyana, Guyana, Peru, and Suriname. Nothing specific seems to be known about its biology.

Types. Holotype, ♂: ECUADOR: **Napo** [Prov.], Res. Ethnica Waorani, 1 km S. Onkone Gare Camp, Trans. Ent. 9.x.1994, 220 m, 00°39'10"S, 76°25'00"W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants in terre firme forest at Trans. 6, Sta. 3, Lot 922 (held in trust at NMNH). Paratypes: 1 ♀, 2 ♂♂, same data as for holotype, except ii.1995 at Trans. 8, 10, & 11, Sta. 5, Lots 964, 1007, 1009, & 1023 (JAS and NMNH).

Additional material examined. ECUADOR, **Napo**: 1 fifth-instar nymph (described above), data same as for holotype, except ii.1995 at Trans. 8., Sta. 10, Lot 1009 (NMNH).

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